

REMARKS

Claims 13-15 and 17-20 have been allowed. In the present Amendment, claims 3-5 and 21-26 have been cancelled; claims 1, 6, 7, 16 and 17 have been amended; and claims 27-31 have been added. Thus, claims 1-2, 6-20, and 27-31 are pending in the present application.

No new matter has been added by way of these amendments and new claims, because each amendment and new claim has support in the original claims and present specification. For example, claim 1 has been amended to incorporate the subject matter of claims 3, 4 and 5. Claims 6-7 have been amended into independent form by incorporating the subject matter of original claim 1. The dependencies of claims 16-17 have changed (and do not depend on canceled claim 4). Support for claim 16 can be found, for example, at page 6, lines 18-20. New claims 27-28 have support in original claims 3-5. New claims 29-30 are supported by original claims 4-5 and in the present specification in the paragraph bridging pages 12-13. New claim 31 has support in the specification at page 4, lines 16-18. Thus, no new matter has been added.

Based upon the above considerations, entry of the present amendment is respectfully requested.

In view of the following remarks, Applicants respectfully request that the Examiner withdraw all rejections and allow the currently pending claims.

Issues Under 35 U.S.C. § 103(a)

The Examiner has rejected claims 1-9, 16 and 21-26 as being unpatentable over Minoru et al., JP 06336401 A (hereinafter referred to as Minoru '401), and Masahiko et al., JP 06227904 A (hereinafter referred to as Masahiko '904), or Carstairs et al., WO 94/24857 (hereinafter referred to as Carstairs '857), in combination (see Advisory Action of May 7, 2002, and Office Action of December 28, 2001). Applicants respectfully traverse.

First, Applicants note that claims 21-26 have been cancelled, rendering moot the rejection of these claims. However, Applicants respectfully traverse these rejections in view of all other presently pending claims.

Second, Applicants respectfully submit that the cited references have been improperly combined.

The Present Invention and Its Unexpected Advantages

The present invention is directed to a plant freshness-keeping composition comprising at least one surfactant (A), wherein said surfactant has a sugar structure or a sugar alcohol structure and at least one selected from the group consisting of a sugar (B), a plant hormone (C), an aging inhibitor (D), an aggregating agent for colloidal particles (E) and a germicide, fungicide and preservative (F). In the composition, either a hydrophobic group is bound via a

glycoside linkage to the sugar or sugar alcohol in the component (A), a hydrophobic group is bound via an ester linkage to the sugar or sugar alcohol in the component (A), or a hydrophobic group is bound via an amide linkage to the sugar or sugar alcohol in the component (A). The component (A) is at a concentration of 0.0001 to 0.1 percent by weight.

Other embodiments of the present invention include methods of using the plant freshness-keeping composition (*i.e.*, see claims 6, 7, 27), specific types of the component (A) (*i.e.*, claims 16, 17, 31), or the type of linkage between the hydrophobic group of component (A) to the sugar or sugar alcohol (*i.e.*, claims 29, 30).

Even the advantages of the present invention have been experimentally confirmed. The present invention has achieved unexpected synergistic advantages when using the claimed component (A) with at least one of components (B), (D), (E) or (F). As a result of the above combinations, the claimed composition creates an improved freshness-keeping effect and safety over conventional compositions.

In contrast, the cited combinations of a) Minoru '401 and Masahiko '904 and b) Minoru '401 and Carstairs '857 fail to disclose all features and advantages of the present invention.

The Cited References Have Been Improperly Combined and Distinctions
Over the Cited Combinations Thereof

Applicants respectfully submit that the cited references have been improperly combined, and that a *prima facie* case of obviousness has not been established based on the cited references for the following reasons.

(A) *Lack of Disclosure of All Claimed Features*

To begin, the references of Minoru '401 and Masahiko '904 or Minoru '401 and Carstairs '857 fail in combination to disclose or suggest a composition of surfactant (A) with at least one of the components (B)-(F) with the cited glycoside, ester or amide linkages.

In fact, the Minoru '401 reference merely discloses one component of the present invention, which is an alkylglucoside (corresponding to (A)). There is even no disclosure of the hydrophobic group being a C₈₋₁₈ saturated, unsaturated, linear or branched group (as recited in claim 16 of the present application). Instead Minoru '401 discloses an alkylglucoside having only 5 carbon atoms without a hydrophobic group. Similarly, Masahiko '904 merely discloses a composition or method comprising trehalose (corresponding to (B)), and Carstairs '857 simply discloses a composition and method comprising gibberellin (corresponding to (C)).

A *prima facie* case of obviousness requires disclosure of all claimed features. Specifically, U.S. case law squarely holds that a proper obviousness inquiry requires consideration of three factors:

- the prior art reference (or references when combined) must teach or suggest all the claim limitations;
- whether or not the prior art would have taught, motivated, or suggested to those of ordinary skill in the art that they should make the claimed invention (or practice the invention in case of a claimed method or process); and
- whether the prior art establishes that in making the claimed invention (or practicing the invention in case of a claimed method or process), there would have been a reasonable expectation of success.

See *In re Vaeck*, 947 F.2d, 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991); see also *In re Kotzab*, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000); *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988);

Here, the first requirement for a *prima facie* case of obviousness has not been satisfied. For example, claim 1 of the present invention recites that the plant freshness-keeping composition comprises at least one surfactant (A) and at least one component selected from the group consisting of a sugar (B), a plant hormone (C), an aging inhibitor (D), an aggregating agent for colloidal particles (E) and a germicide, fungicide and preservative

(F). Further, claim 1 recites that the hydrophobic group is bound by a glycoside linkage, an ester linkage, or an amide linkage to the sugar or sugar alcohol in the component (A). In addition, claim 16 recites that the hydrophobic group is a C₈₋₁₈ saturated, unsaturated, linear or branched group. Thus, both of the asserted combinations of a) Minoru '401 and Masahiko '904 and b) Minoru '401 and Carstairs '857 do not disclose the claimed compositions of surfactant (A) with at least one of the components (B)-(F), where the hydrophobic group is bound by the cited glycoside, ester or amide linkages to the sugar or sugar alcohol in the component (A) (i.e., the features of claim 1). There is even no disclosure of all claimed features of claim 16. Further, none of the cited references account for the deficiencies of one another.

Thus, the first requirement for a *prima facie* case of obviousness has not been met, and Applicants respectfully submit that these rejections are overcome. The cited references, at best, simply disclose single components of the present invention, and not the instantly claimed combinations of (A) plus one of (B)-(F) as well as the recited linkages.

*(B) The Other Requirements for a Prima Facie Case of
Obviousness Have Not Been Satisfied*

Further, based on the lack of disclosure of all claimed features, the cited references cannot provide the requisite motivation or reasonable expectation of success to arrive at a combination composition as instantly claimed.

In fact, Applicants respectfully submit that no proper motivation has been shown because the USPTO has failed to identify the specific principle known to one of ordinary skill in the art that suggests the claimed methods and compositions. See *In re Sang Su Lee*, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002) (the Board must identify specifically the principles, known to one of ordinary skill, that suggest the claimed combination) (citing *In re Rouffet*, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998)). Specifically, the USPTO has not identified the principle as to how and why one having ordinary skill in the art would combine Applicants' component (A) with any one of components (B)-(F), with the recited glycoside, ester or amide linkages. Without the proper motivation and identifying principles, Applicants respectfully submit that the combinations of references are improper.

Inoperability of the Cited References

In addition, Applicants respectfully refer the Examiner to their remarks in the After Final Amendment (filed March 27, 2002) with respect to the Rule 132 Declaration. As can be seen in the Declaration, the concentration of 0.5 wt% as taught by Minoru '401, when combined with a component (B) or (C) (as instantly claimed), does not preserve the freshness of the plant (see Tables 22 and 23, right columns). This is because a composition of 0.5 wt% of alkylglucoside as disclosed in Minoru '401, is too thick to preserve the freshness of a plant.

If a proposal for modifying the cited reference in an effort to attain the claimed invention causes the reference to become inoperable or destroys its intended function, then the requisite motivation to make the modification would not have existed. *In re Gordon*, 221 USPQ 1125 (Fed. Cir. 1984); *In re Fritch*, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992); see also *In re Ratti*, 123 USPQ 349, 352 (CCPA 1959). That is the case here because the present invention would destroy the intended purpose of the Minoru '401 reference (using 0.5 wt% of alkylglucoside is too thick).

Thus, the present invention cannot be achieved in view of the disclosure of Minoru '401, because 0.5 wt % of component (A) does not work.

The Teaching Away of the Cited References

Also, Applicants respectfully submit that Minoru '401 actually teaches away from achieving the present invention because the sole ingredient of Minoru '401 (component (A)) cannot achieve the present invention or its advantages. Any cited reference used for a rejection under 35 U.S.C. § 103(a) must be considered in its entirety, i.e., as a whole, including those portions that would lead away from a claimed invention. See *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). In other words, the Minoru '401 reference must be read in its entirety, including the teaching away that using 0.5 wt % of component (A) would be have disadvantages (i.e., would not work due to the thickness of the composition).

Existence of Unexpected Results Rebuts Any Asserted Prima Facie Case of Obviousness

Applicants further submit that besides the lack of disclosure from the cited references, and the lack of requisite motivation and reasonable expectation of success, the present invention achieves unexpected, synergistic advantages that would rebut any *prima facie* case of obviousness based on the combination of Minoru '401 and Masahiko '904, and Minoru '401 and Carstairs '857.

Applicants respectfully refer the USPTO to the comparative data in the present specification (see Tables 1 and 9 comparing inventive products 13, 49, 53, 54, 56, versus comparative products 10 and 30 of trehalose and gibberellin, respectively). The claimed combination of component (A) and at least one of components (B)-(F) gives synergistic advantages of better growth and freshness conditions of various plants (see the experimental results in Tables 2 and 4). Thus, Applicants submit that these rejections are overcome because evidence of unexpected results is in the present specification. See *In re Soni*, 54 F.3d 746, 34 USPQ2d 1684 (Fed. Cir. 1995) (error not to consider evidence in the specification).

In addition, the previously submitted Rule 132 Declaration is also evidence of patentability for the present invention. The Declaration clearly demonstrates that Minoru '401 teaches a compound with no preservation-capability. It is obvious that the data in Tables 22-23 indicate that the present invention achieves synergistic and unexpected results over the composition having 0.5 wt% of component (A) as disclosed by Minoru '401.

Therefore, Applicants have demonstrated that the present invention has achieved unexpected results and that the Minoru '401 reference has been improperly combined with Masahiko '904 or Carstairs '857 due to the benefit of hindsight reconstruction.

Conclusion

Thus, Applicants respectfully submit that the present invention has subject matter that is patentably distinguishable from the cited references.

Specifically, the present claims incorporate patentable subject matter over the Minoru '401 reference and Masahiko '904 or Carstairs '857 in combination. This is because a *prima facie* case of obviousness cannot be established based on the cited references since the cited references do not even disclose all features as instantly claimed. Further, the requisite motivation and reasonable expectation of success cannot be provided because Minoru '401 teaches a component (A) that would not work to give synergistic advantages as taught by Applicants. The Minoru '401 reference would even be made in operable in light of the presently pending claims (*i.e.*, 0.5 wt% of alkylglucoside is too thick to preserve the freshness of a plant). The disclosure in the Minoru '401 reference is even a teaching away that one skilled in the art would not achieve the present invention. In addition, Applicants have shown results that are unexpected in view of the state of the art.

Therefore, based on the above remarks, Applicants respectfully request the Examiner to withdraw all rejections and allow the currently pending claims.

Allowable Subject Matter

Applicants note that claims 13-15 and 17-20 have allowable subject matter.

A full and complete response has been made to the Office Action. The Examiner is respectfully requested to pass the application to issue.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Eugene T. Perez (Reg. No. 48,501) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

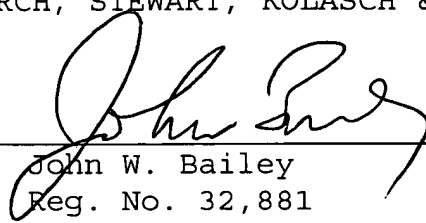
Attached hereto is a marked-up version of the changes made to the application by this Amendment.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By



John W. Bailey
Reg. No. 32,881

JWB/ETP

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

Attachment: Version with Markings to Show Changes Made

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 3-5 and 21-26 have been cancelled.

Claims 1, 6, 7, 16 and 17 have been amended as follows:

1. (Twice Amended) A plant freshness-keeping composition comprising at least one surfactant (A), wherein said surfactant has a sugar structure or a sugar alcohol structure, and at least one selected from the group consisting of a sugar (B), a plant hormone (C), an aging inhibitor (D), an aggregating agent for colloidal particles (E) and a germicide, fungicide and preservative [(F).] (F);

wherein either a hydrophobic group is bound via a glycoside linkage to the sugar or sugar alcohol in the component (A) and said component (A) is at a concentration of 0.0001 to 0.1 percent by weight of said composition,

a hydrophobic group is bound via an ester linkage to the sugar or sugar alcohol in the component (A), or

a hydrophobic group is bound via an amide linkage to the sugar or sugar alcohol in the component (A).

6. (Amended) A method of preserving a plant with keeping the freshness thereof, [which comprises applying an effective amount of the composition as defined in Claim 1 to the plant.] said method comprising:

applying an effective amount of a plant freshness-keeping composition, wherein said plant freshness-keeping composition comprises at least one surfactant (A), wherein said surfactant has a sugar structure or a sugar alcohol structure, and at least one selected from the group consisting of a sugar (B), a plant hormone (C), an aging inhibitor (D), an aggregating agent for colloidal particles (E) and a germicide, fungicide and preservative (F).

7. (Twice Amended) A method of using [the composition as defined in Claim 1] a composition for preserving a plant with keeping the freshness thereof, comprising the steps of:

a) obtaining a sample comprising said composition, where said composition is in the form of aqueous solution or powder; and

b) applying said sample onto the [plant.] plant;

wherein said plant freshness-keeping composition comprises at least one surfactant (A), wherein said surfactant has a sugar structure or a sugar alcohol structure, and at least one selected from the group consisting of a sugar (B), a plant hormone (C), an aging inhibitor (D), an aggregating agent for colloidal particles (E) and a germicide, fungicide and preservative (F).

16. (Amended) The composition as claimed in Claim [3,] 1, wherein the component (A) having the hydrophobic group bound via the

glycoside linkage to the sugar or sugar alcohol in the component (A) is selected from the group consisting of: an alkyl glycoside, an alkyl polyglycoside, a polyoxyalkylene alkyl (poly)glycoside, an alkyl (poly)glycoside sulfate comprising an alkyl (poly)glucoside sulfated therein, a phosphated alkyl (poly)glycoside, a glyceryl etherified alkyl (poly)glycoside, a sulfosuccinated alkyl (poly)glycoside, a glyceryl-esterified alkyl (poly)glycoside, a carboxy-alkylated alkyl (poly)glycoside, a cationic alkyl (poly)glycoside, and a betaine alkyl [(poly)glycoside.] (poly)glycoside, wherein the hydrophobic group is a C₈₋₁₈ group, which is any one of saturated, unsaturated, linear and branched groups.

17. (Amended) The composition as claimed in Claim [4,] 1, wherein the component (A) having the hydrophobic group bound via the ester linkage to the sugar or sugar alcohol in the component (A) is selected from the group consisting of: a sorbitan fatty acid ester, a polyoxyalkylene sorbitan fatty acid ester, a sucrose fatty acid ester, a sorbitol fatty acid ester, a polyoxyalkylene sorbitol fatty acid ester, a polyglycerol, a polyglycerol fatty acid ester, a glycerol fatty acid ester and a polyoxyalkylene glycerol fatty acid ester.

Claims 27-31 have been added.